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**The relationship of self-esteem and self-efficacy:
Global and domain-specific perspectives**

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by

Marilla Lou Fox

**A Thesis Submitted to the
Graduate Faculty in Partial Fulfillment of the
Requirements for the Degree of
MASTER OF SCIENCE**

Major: Psychology

Signatures have been redacted for privacy

**Iowa State University
Ames, Iowa**

1992

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INTRODUCTION

Two important elements of mental health, self-esteem and self-efficacy, are tacitly assumed to be closely related. While the relationship between self-esteem and self-efficacy has been posited theoretically, little empirical evidence has been offered to explicate the relationship. One of the confounding factors obscuring the self-esteem/self-efficacy connection is the tendency to look at self-esteem from a global or multidimensional perspective (Wylie, 1974, 1989), while self-efficacy is often examined in specific behavioral domains (Bandura, 1982). Another confounding factor is a tendency to include self-efficacy items within instruments designated as self-esteem measurements (e.g. Berger, 1952; Fleming & Watts, 1980; Korman, 1970; Lorr & Wunderlich, 1986). Often a clear distinction is not made between the construct of self-esteem and the construct of self-efficacy.

The present research is aimed at overcoming those confounds by measuring self-esteem and self-efficacy using a battery of instruments in which separate questionnaires are used to measure each general construct and other questionnaires are used to measure each construct in the specific domain of eating behavior. Not only the relationship between the two constructs, but the relationship of a domain-specific and general aspects within each construct will be examined. Hence, this study will investigate construct

validity using multiple traits. At this time, multiple methods will not be used, however (cf., Campbell & Fiske, 1959).

Eating behavior has been chosen as the target for the domain-specific measures because it is a universal behavior that is associated with tremendous social pressure to control (Yates, 1989). Social pressure is responsible, at least in part, for widespread weight preoccupation, eating disorders, and obesity, with the attendant aberrations in self-esteem and self-efficacy (Bruch, 1973, 1985; Grant & Fodor, 1986; Mizes & Klesges, 1989; Phelan, 1987; Raciti & Norcross, 1987). The present study does not focus on eating disorders. However, weight preoccupation and subclinical eating behavior problems have been found to be comparatively common on college campuses (Dykens & Gerrard, 1986; Hart & Ollendick, 1985; Mintz & Betz, 1988; Raciti & Norcross, 1987), with incidence rates ranging from 12 to 69 percent. It is assumed that the incidence of maladaptive eating behaviors will be reflected in the domain-specific measures of eating self-esteem and self-efficacy and facilitate comparisons with the general measures. It should be noted that Laessle, Tuschl, Waadt, & Pirke (1989) found no support for the hypothesis that psychological adjustment falls on a continuum parallel to the degree of disorder in eating behaviors.

While developing an eating self-efficacy scale, Ascherman

(1989) set aside several items that appeared to have more face validity as self-esteem than as self-efficacy. His study raised interesting questions about the relationship of self-esteem and self-efficacy and about their general and specific aspects. Since no general measure of self-esteem was included in the Ascherman (1989) study and the eating self-esteem items were incidental to his study, it was not possible to draw elaborate conclusions about the relationships.

In order to help clarify the constructs of self-esteem and self-efficacy and their relationship, the following four hypotheses were tested in this study:

1. Measures of general self-esteem and self-efficacy are correlated to a degree that would indicate that they are closely related but separate constructs. The same is true of measures of eating-specific self-esteem and self-efficacy. In addition, correlations between the pairs of measures will be lower than the internal consistency of the individual measures.

2. General measures of self-esteem and self-efficacy are expected to be less highly correlated than measures of the two constructs in a specific domain such as eating behavior.

3. Levels of self-esteem can be best predicted by levels of self-efficacy (or vice versa) when both are measured either generally or in a particular domain.

4. Several gender differences will be apparent: (a)

Average levels of self-esteem and self-efficacy (when measured either generally or specifically) will differ according to gender, (b) the correlations between the self-esteem/ self-efficacy pairs will differ according to gender, and (c) the genders will differ on whether the specific or general measures within the constructs will be at a higher level.

The following literature review summarizes existing theory and previous research regarding the definitions and relationship of self-concept, self-esteem, and self-efficacy. The literature regarding the connection between self-attitudes and eating behavior has also been included in the review.

Self-concept

Self-esteem is sometimes confused with the broader construct of self-concept (Fleming & Courtney, 1984; Marsh, 1987; Shavelson, Hubner, & Stanton, 1976). One way to make a clear differentiation between self-concept and self-esteem is on the basis of affect. Whereas, self-concept has usually been described as a cognitive description of one's self, self-esteem has commonly been defined as the positive or negative affect arising from an evaluation of the self-concept, according to reviews of the literature by Breytspraak and George (1982), and Sonstroem and Morgan (1989).

Confusion has sometimes been evident in instruments designed to measure self-concept and/or self-esteem. One

attempt to avoid the confusion was made by Fleming and Courtney (1984), who reviewed several existing instruments and differentiated between the constructs they were designed to measure. Fleming and Courtney (1984) drew attention to the similarity between global self-esteem as measured by Rosenberg (1979) and the emotional component of self-concept, according to the theory of Shavelson, et al. (1976).

Rosenberg (1979) elaborated on self-concept definitions, saying, "The self-concept is not the 'real self' but, rather, the picture of the self..." (p. 7). The self-concept "picture" may bear similarity to a triple exposure, since Rosenberg (1979) suggested it combines what the individual perceives to be self as it exists, self as it is desired to be, and self as it is presented to others. Rosenberg (1979) also pointed out that theories of self-concept (Mead, 1934; Symonds, 1951) have long recognized the simultaneous existence of the objective self and the subjective self. The self is viewed and evaluated by the individual as an object; while at the same time, the individual experiences self as a subject, that is, an active agent in life.

A theory of self-concept, outlined and elaborated by Epstein (1973), and Shavelson et al. (1976), uses a hierarchical model. The model organizes elements of the self-concept from the most specific and least stable perceptions of self at the bottom of the hierarchy, upward to

more general, global and more stable perceptions of self toward the top of the hierarchy. The theory suggests that change in self-concept is most likely to occur from the bottom, up. Specific experiences can bring about changes in self-concept at the lower levels, which may in turn result in changes in higher, more general elements of the hierarchy, depending on how the upper and lower elements relate to each other. According to Shavelson et al. (1976), "to change general self-concept, many situation-specific instances, inconsistent with general self-concept, would be required" (p. 414).

Self-concept has been said to subsume self-esteem, according to Fleming and Courtney (1984). Epstein (1973) designated general self-esteem as a higher order element of the self-concept hierarchy, undergirded on the second order by postulates such as general competence, moral self-approval, power, and love worthiness. Each of the second order postulates is in turn supported on still lower levels by more specific self-perceptions related to more specific characteristics and behavioral domains.

Marsh (1987) used hierarchical confirmatory factor analysis on the Self-Descriptive Questionnaire, based on Shavelson et al. (1976), and found empirical evidence for Shavelson's hierarchical model of the self-concept. However,

the findings suggested that positions on the hierarchy are less clear-cut than originally hypothesized.

Self-esteem

Although space does not permit a comprehensive review here of the literature about the importance of self-esteem to psychological adjustment, Sonstroem and Morgan (1989) provide a summary of theories and research relating low self-esteem to such problems as chronic anxiety, acute depression, child abuse, and the interpersonal problems of adolescents. Voluminous literature supports a connection between low global self-esteem and eating disorders (Anderson, 1988; Baird & Sights, 1986; Bruch, 1978, 1985, 1988; Dykens & Gerrard, 1986; Garner & Bemis, 1982; Grant & Fodor, 1986; Gross & Rosen, 1988; Laessle et al., 1989; Mintz & Betz, 1988; Swift & Wonderlich, 1988; Tobin, Johnson, Steinberg, Staats, & Dennis, 1991; Yates, 1987).

Self-esteem is credited with being one of the most important human motivators (Epstein, 1973). Gecas and Mortimer (1987) portrayed the self-esteem motive as the drive to "view oneself favorably and to act in such a way as to protect or increase a favorable view of oneself" (p. 268).

The most basic definition of self-esteem depicts it as simply an attitude of self-acceptance or a feeling of self-worth (Coopersmith, 1967; Fleming & Watts, 1980; Rosenberg, 1965, 1979). Rosenberg (1979) explained that the

level of self-esteem corresponds to how positively one feels about her/himself (high self-esteem), versus how negatively one feels (low self-esteem). A person with high self-esteem does not necessarily consider her/himself to be superior to others, but does have self-respect. As Wylie (1974) stated, high self-esteem does not require perfection; instead, it means that one is able to respect one's self, "including one's admitted faults" (p 127). A person with low self-esteem lacks self-respect and sees her/himself as deficient.

Positive or negative affect arises from evaluation processes in which individuals compare their existing selves with their desired selves (Rosenberg, 1979; Wells & Marwell, 1976). These positive or negative emotions were called "self-related affects" by Vallerand and Blais (1989), who found the emotions are more likely to be elicited when an individual attributes causation in a situation to an internal locus of control. The concept of locus of control will be discussed in more detail under the self-efficacy heading.

Self-esteem has been described, so far, as a very general or global construct. Definitions of self-esteem take on much more complexity and diversity when the construct is conceived of as having multiple dimensions. The diversity in definitions of self-esteem has often been criticized (Burke, 1983; Fleming & Courtney, 1984; Mearns, 1989; Wylie, 1974). Fleming and Courtney (1984) said that it is important not to

define self-esteem so broadly that it overlaps other constructs and thereby loses its "scientific utility" (p. 407). For example, a self-esteem scale that includes items tapping depression and anxiety should not be used in a study of the relationship of self-esteem to depression or anxiety. A similar caveat can be applied to the present study. It is important, when studying the relationship between self-esteem and self-efficacy, to be sure that measurement of one of the constructs is not confounded by items measuring the other construct.

However, the perception of general self-efficacy or general competence is often counted, along with self-worth, to be a dimension of self-esteem (Epstein, 1973; Gecas, 1982; Harter, 1985; Hughes & Demo, 1989; Korman, 1970; Lorr & Wunderlich, 1986; Wells & Marwell, 1976) and is sometimes targeted by items in self-esteem instruments (e. g., Berger, 1952; Fleming & Watts, 1980; Korman, 1970; Lorr & Wunderlich, 1986). In addition to perceptions of self-worth and self-efficacy, other self-perceptions sometimes seen as dimensions of self-esteem are: 1) moral virtue (Diedrick, 1989; Gecas, 1982), 2) power (Epstein, 1973), 3) love worthiness (Epstein, 1973; Wells & Marwell, 1976), and 4) social approval (Lorr & Wunderlich, 1986, Korman, 1970). The fact that some of these dimensions cannot be clearly differentiated from one another adds to the confusion.

Still more specific dimensions of self-esteem pertaining to certain behavioral or characteristic domains have been studied by other researchers. Secord and Jourard (1953) and Franzoi and Shields (1984) developed instruments to test regard for one's body. Fleming and Watts (1980) modified the Janis and Fields (1959) Feelings of Inadequacy Scale (FIS) by adding items testing academic self-esteem. Later, Fleming and Courtney (1984) added more items to the FIS to test physical self-esteem. Unsurprisingly, Fleming and Courtney's factor analysis of FIS revealed dimensions of academic self-esteem and physical self-esteem. The foregoing illustrates a problem with dimensional approaches to measuring self-esteem: the dimensions one finds are very likely to be artifacts of how the instrument was designed. What you find can be determined by the way the search is conducted.

Assuming that the same dimensions apply equally to everyone's self-esteem can lead to invalid conclusions. Diedrick's (1989) research found the various dimensions impact self-esteem differently for different people. She found that only self-efficacy was strongly related to general self-acceptance in women who aspired to traditional male careers; while, both self-efficacy and moral virtue were significantly correlated with self-acceptance in women preparing for traditional female careers. A gender difference in dimensions of self-esteem was found by Grant and Fodor (1986), who

reported physical effectiveness to be equally important to the self-esteem of males and females, but physical attractiveness to be more important to females' self-esteem. The differences would be missed if these dimensions of self-esteem were embedded in one total self-esteem score; and it could logically, but perhaps erroneously, be assumed that males and females differed in total self-esteem.

The topic of gender differences in self-esteem has been strongly debated for some time, with findings being inconsistent when either global or specific measures are used. As noted by Fleming and Courtney (1984), women are often shown to be slightly lower than men in self-esteem. However, this is not an uncontested finding since other studies, such as Maccoby and Jacklin (1974), found no significant gender difference. Recently, Skaalvik (1990) found no significant gender difference in general academic self-esteem or math self-esteem of Norwegian sixth graders. At the same time, she found girls to be higher in self-esteem for their work in studying languages. Gender differences may be particularly marked around the time of puberty. Simmons (1987) reviewed several of her own large-scale, random sample surveys of both preadolescent and adolescent youths and concluded that girls scored lower than boys on global self-esteem and other specific dimensions, including body esteem. Simmons' review

also indicated that self-esteem tends to increase from early to late adolescence in both genders.

A hierarchical approach (Shavelson et al., 1976), discussed above in the self-concept section, is one way to alleviate confusion about the dimensions of self-esteem. As Epstein (1973) suggested, a general or global sense of self-acceptance can be viewed as superordinate to other more specific dimensions of self-esteem, such as general self-efficacy and a general sense of moral virtue, which are in turn superordinate to perceptions of efficacy or morality in specific behavioral domains (e.g., control of eating).

Rosenberg (1965, 1979) pioneered measurement of global self-esteem. However, he recognized that global self-esteem may not coincide with self-esteem in specific domains and he recommended that attention should be paid to both general and specific self-esteem. Wylie (1987) backed up the recommendation to study self-esteem as it applies to specific domains of life. She said it should be kept in mind that general self-esteem is often less effective than specific self-esteem in predicting another variable. For instance, Fleming and Watts (1980) found a weak relationship between general self-esteem and verbal intelligence, but found a stronger relationship between academic self-esteem and verbal intelligence. Another example, a study by Jordan (1981), also illustrates the advantage of specificity in measurement.

Jordan found that a measurement of global self-esteem was less predictive of school performance than a specific measure of academic self-esteem.

Rosenberg (1979) suggested the strength of the relationship between a measure of general self-esteem and a measure of self-esteem in a specific domain depends on how important the specific domain is to the individual. He said, "One cannot safely generalize from the specific to the global, or vice versa" (p. 20), because generalization ignores the complexity of the hierarchical organization of self-esteem and differential weights of specific dimensions. By contrast, a recent study by Marsh (1986) found little support for weighting the personal importance of specific dimensions of self-concept in predicting general self-esteem. The lack of support in Marsh's data for weighting dimensions may be related to Dickstein's (1977) caution to researchers. She warned that, unless a broad spectrum of specific dimensions are measured, the importance of each dimension will not show up in the results. It may be that studies have been too arbitrary and narrow in determining which dimensions will be tapped.

The existence of general or global self-esteem versus self-esteem in specific dimensions is supported by at least two lines of inquiry. First, longitudinal research such as that reported by Simmons (1987) and Gecas and Mortimer (1987)

show that despite short term changes with changing situations, self-esteem shows considerable stability. They reported stability of .50 to .62 in measurements of adolescents' general self-esteem over a one-year average interval. Simmons (1987) interpreted this to indicate support for the construct of global self-esteem, which changes and evolves with experience. An interesting corollary to longitudinal research focusing on general self-esteem would be a longitudinal study which also measured self-esteem in a specific domain and compared the stability of the general and specific measures.

Another method of investigating the existence of global self-esteem is by factor analysis. Fleming and Courtney (1984) used their multidimensional Self-Rating Scale and reported that second order factor analysis "yielded a single superordinate factor of global self-esteem" (p. 404). Other researchers have used factor analysis on the Rosenberg Self-Esteem Scale (RSE), which Rosenberg (1979) developed as a global measure. Although various researchers have reported similar results when analyzing the factors of the RSE, they have drawn different conclusions. Kaplan and Pokorny (1969), Shahani, Dipboye, and Phillips (1990), and Zeller (1988) all agreed that items on the RSE load on two factors, which corresponded to positively and negatively worded items. Zeller (1988) reanalyzed the data of Kaplan and Pokorny (1969) and discounted their interpretation of the two factors as

separate dimensions of self-esteem. Zeller (1988) argued that there was no meaningful difference in the way negative and positive factors related to other variables in the Kaplan and Pokorny (1969) study; and he attributed the factor loadings to response set rather than to two dimensions of self-esteem. Simmons (1987) used LISREL to analyze the RSE and also concluded it was not necessary to consider the factors as anything other than a positive or negative orientation in general. Shahani et al. (1990), on the other hand, controlled for response set and found different relationships between the two factors and work attitudes. Although Shahani et al. (1990) supported the two factor interpretation of the RSE, they found only a slight advantage for using the separate factors in making predictions.

It appears the verdict is still out on whether positive and negative self-esteem, as measured by the RSE, should be considered separate dimensions. Nevertheless, an examination of the items (see Appendix) dispels questions about the RSE being global in the sense that it is free of situation-specific contexts, suggested by Sonstroem and Morgan (1988) as an indicator of globality.

For the purposes of this study the constructs of general self-esteem and eating self-esteem will be of interest. They are defined as follows: General self-esteem, in accordance with Rosenberg (1979), is how positive or negative one feels

about self-acceptance, self-respect, or self-worth. The general definition will be narrowed in order to apply it to self-esteem in the specific domain of eating behavior. Thus, eating self-esteem is defined as the degree of respect and acceptance one feels for one's self in the context of eating behavior. Also in accordance with Rosenberg (1979), the importance of both the difference between self-esteem and self-efficacy and their strong relationship will be considered.

Self-efficacy

The most widely recognized definition of self-efficacy was stated by Bandura (1977). He said, "An efficacy expectation is the conviction that one can successfully execute the behavior to produce the outcomes" (p. 193). Elsewhere, other terms are used for virtually the same construct, for instance, self-competence (Motowidlo, 1979, 1981), self-confidence (Rosenberg, 1979), or from a negative perspective - ineffectiveness (Raciti & Norcross, 1987; Wagner, Halmi, & Maquire, 1987).

Like self-esteem, self-efficacy expectations play an important role in motivation (Gecas & Mortimer, 1987). Self-efficacy expectations influence behavioral, cognitive and emotional responses to situations. Bandura (1982) found strong support for his prediction that individuals with high self-efficacy expectations would be more likely to perform

behaviors in which they believed they were competent.

Self-efficacy expectations motivate people to act in such a way as to protect their views of themselves "as agents in their environments, having some control over their circumstances" (Gecas and Mortimer, 1987, p. 268).

Predictions of responses made on the basis of self-efficacy expectations can be confounded, however, by outcome expectations (Bandura, 1977, 1982; Bandura & Wood, 1989; Maddox, Sherer, Mercandante, Prentice-Dunn, Jacobs, & Rogers, 1982). Despite the definition quoted above from Bandura (1977), he says in the same article that self-efficacy expectation refers only to the belief that one can perform an appropriate behavior. Outcome expectation refers to the conviction of whether or not the appropriate behavior will produce the desired outcome.

In order for behavior to be most accurately predicted, a person's self-efficacy and outcome expectation must be complementary. If the level of self-efficacy is high and outcome expectation is positive, then behavior is most likely to be carried out. On the other hand, if the self-efficacy level is low and outcome expectations are negative, the individual will most likely fail to act. Difficulty in prediction occurs when self-efficacy is high and outcome expectancy is negative, or alternately, self-efficacy is low but outcome expectancy is positive.

Self-efficacy is moderately related to the concept of locus of control (Sherer et al., 1982). Outcome expectation is more closely related to locus of control. Locus of control is said to be either internal or external to self, depending on "whether the person perceives the reward as contingent on his own behavior or independent of it" (Rotter, 1966, p. 1). Internal locus of control can be equated with positive outcome expectation. Both perceived locus of control and outcome expectation pertain to whether a person believes her or his action will bring about desired results. Self-efficacy beliefs don't necessarily relate to the likelihood of ensuing rewards, but only to the ability to carry out the behavior.

Conviction of internal locus of control (or positive outcome expectancy) can be lacking in individuals who experience negative social discrimination. Hughes and Demo (1989) cited the justifiable skepticism of racial minorities about whether efficacy will result in the same outcome for them that it will for Whites. Such a discrepancy can interfere with the ability to make predictions that a behavior will be enacted when an individual believes her/himself to be efficacious. Again, a person is more likely to carry out a behavior when convinced of both her/his efficaciousness and a favorable outcome.

Another possibility is that self-efficacy itself and not just behavioral enactment will be inhibited in the absence of

positive outcome expectation. Maddox, Sherer, and Rogers (1982) found that manipulation of outcome expectancy influenced self-efficacy expectancy in assertiveness training. Similar findings were reported by Bandura and Wood (1989), whose subjects had higher self-efficacy expectations in a pseudo-managerial scenario when expectancy of outcome control was enhanced. Despite evidence that self-efficacy expectations correlate with outcome expectations, the two kinds of expectations were supported as separate constructs by factor analysis of expectations within several life roles, such as marriage, parenting, occupation, economic management, in a study by Wells-Parker, Miller, and Topping (1990).

Self-efficacy expectations are fostered or undermined by four kinds of experience (Bandura, 1982): 1) performance attainment, 2) vicarious experience, 3) verbal persuasion, and 4) perception of physiological states. In addition, the belief that a skill is innate rather than acquired will inhibit the development of self-efficacy expectations (Wood & Bandura, 1989). Gecas and Mortimer (1987) outlined a pattern of "spiralling development" (p. 280) of self-efficacy. A positive spiral is exhibited when an expectation of self-efficacy leads to attempting and succeeding at something new, which further builds the sense of self-efficacy. Negative spirals can occur when self-efficacy is in doubt or when it is expected, but attempts fail.

When self-efficacy expectations are not met, it can be a shock. Rosenberg (1987) found that children and adolescents often experience symptoms of depersonalization when they fall short or exceed expectations. In other words, we feel a sense of unreality about ourselves when we unexpectedly fail or succeed.

Bandura (1982) suggested an approach to studying self-efficacy that is "microanalytic" (p. 123-124). In other words, he preferred to study self-efficacy in narrowly prescribed behavioral domains rather than in the global, generalized sense. He posited that the more specific type is a better predictor of human behavioral and emotional responses. Bandura (1977) did, however, recognize that self-efficacy expectations vary in their generality. Motowidlo (1979, 1981) studied perceived self-competence and expectancy of success, for all intents the same things as self-efficacy expectation and outcome expectation, respectively. Motowidlo (1979) drew a theoretical distinction between state expectancies, pertaining to specific domains or situations, and trait expectancies, pertaining to a general sense of competence.

The microanalytic approach requires that special measurement instruments must be developed pertaining to each behavioral domain as it is studied. The domain of eating behavior is being targeted by the present study. Several

eating self-efficacy instruments (e.g., Bennett, 1987; Glynn & Ruderman, 1986; Phelan, 1987; Wagner et al., 1987) were reviewed and given consideration by Ascherman (1989) when he developed the Eating Self-efficacy Expectation measure (ESEE).

Although Bandura and his microanalytic perspective have dominated the self-efficacy literature, general self-efficacy has been measured and studied by other investigators (Maddox, et al., 1982; Sherer et al., 1982; Sherer & Adams, 1983). The rationale for focusing on general self-efficacy was explained as follows by Maddox et al. (1982), "An individual's past experiences with success and failure in a variety of situations should result in a general set of expectations that the individual carries into new situations" (p. 664). When an individual is in an ambiguous situation, general self-efficacy may be the most accurate predictor of response that is available.

General self-efficacy deficits have been found to be related to eating disorders, especially bulimia (Bennett, Spoth & Borgen, 1991; Hart & Ollendick, 1985; Strober & Humphrey, 1987; Tobin et al., 1987; Toner, Garfinkel & Garner, 1987; Wagner, et al., 1987). Bruch (1985) theorized:

Long before the illness becomes manifest, these girls have felt helpless and ineffective in conducting their own lives, and the severe discipline over their bodies

represents a desperate effort to ward off panic about being completely powerless. (p. 10)

The definitions of the constructs of general self-efficacy and eating self-efficacy being used here are as follows: General self-efficacy expectation is an attitude of self-confidence which applies to many ongoing and upcoming life demands. Eating self-efficacy is defined, following Ascherman (1989), as "the perceived ability to control eating, dieting, binging, purging and other eating related behaviors" (p. 5).

Support for hypotheses

Varying degrees of support can be found in the literature for the four hypotheses put forth here. In some cases, empirical data can be cited; in other cases, support is more theoretical.

First hypothesis. Self-esteem and self-efficacy are separate constructs, both when measured generally and when measured in a specific domain, according to the first hypothesis. The present study examined the level of the correlations between separate instruments for each general and specific construct, in addition to the instruments' internal consistencies. However, another approach would be to include all the items on one instrument and then analyze whether the items factored out into separate constructs. In at least one case, empirical evidence suggests that general self-efficacy

items and self-esteem items may load on different factors when they are included in the same instrument. Motowidlo (1979) offered data that may support the discriminant validity of viewing self-esteem and self-efficacy as separate constructs. In developing his Estimate of Self-Competence Scale (very much like a general self-efficacy scale), he began with an item pool that included some items with more face validity as general self-evaluation items (very much like self-esteem). Factor analysis found the general self-evaluation items did not correlate well with total scores and they were dropped from the measurement of self-competence. By contrast, Ascherman (1989) dropped seven items that had more face validity as self-esteem items from his measure of eating self-efficacy. However, he subsequently found that the significant factor loadings for the eating self-esteem items coincided with significant factor loadings for the eating self-efficacy items in every case but one.

Second hypothesis. Specific measures of self-esteem and self-efficacy will be more closely related than general measures, according to the second hypothesis. Support for the second hypothesis can be drawn from the theoretical and empirical development of a hierarchical model of self-concept (e.g., Shavelson et al., 1976; Marsh, 1987). The hierarchical model says general self-esteem is superordinate to general

self-efficacy, which in turn is superordinate to specific self-esteem and self-efficacy (Epstein, 1973).

One way to look at the hierarchy is that general self-esteem is superordinate because it includes affects arising from evaluations of self as both (a) an active agent in multiple behavioral domains (i.e., general self-efficacy, according to Bandura [1982]); and also (b) an object, which includes non-agentic factors such as genetic endowments and parental behavior during infancy. Following this line of reasoning, general self-efficacy is subordinate to general self-esteem, because general self-efficacy pertains only to evaluations of self as an active agent, albeit, in multiple domains. In turn, specific self-esteem and self-efficacy are subordinate to general self-esteem and self-efficacy, because the specific constructs pertain to only one domain of behavior or endowment.

The second hypothesis states that specific measures of self-esteem and self-efficacy will be related more closely than general measures of the two constructs. An application of the hierarchical model indicates general self-esteem includes both agentic and non-agentic evaluations of self; whereas, general self-efficacy includes only an agentic evaluation of self; hence, the two general constructs will probably not be a close match. On the other hand, corresponding measures of domain-specific self-efficacy and

self-esteem will necessarily pertain to evaluations of self in the same behavioral, agentic domain and so will be expected to correlate very closely.

In general, research reviewed here found a moderately consistent relationship between general self-esteem and general self-efficacy. Lorr and Wunderlich (1986) found a correlation of 0.69 between measures of general self-esteem and general self-confidence (self-efficacy).

Lower correlations were found between general measures by Motowidlo (1979), but were perhaps due to his instrumentation. He found a correlation of 0.17 between his Estimate of Self-Competence (ESC) scale and the California Personality Inventory's self-acceptance scale. It is noteworthy that he found a higher correlation (0.30) between ESC scores and another scale that confounds self-esteem with self-efficacy, the Feelings of Inadequacy scale of Janis & Field (1959).

Ascheman (1989) found a 0.77 correlation between domain-specific measures of eating self-efficacy and eating self-esteem. His study did not include a measure of general self-esteem so the relatively high 0.77 specific-specific relationship could not be compared to the strength of a general-general relationship as has been done in the present study.

Third hypothesis. Levels of self-efficacy and self-esteem are most strongly related when they are both

measured either generally or in a specific domain, according to the third hypothesis. Previous empirical data supporting this hypothesis is limited. Maddox et al. (1982) reported correlations of 0.510 between general measures of self-esteem and self-efficacy and only 0.279 between general self-esteem and the more specific social self-efficacy. Sekaran (1982) found stronger correlations between a work-specific sense of competence (self-efficacy) and work-specific self-esteem than between general self-esteem and self-esteem from work. When both self-esteem and self-efficacy were measured as they pertained to the specific domain of work, they correlated 0.63 for males and 0.58 for females. General self-esteem and work-specific self-esteem correlated less than 0.30 for both genders.

Fourth hypothesis. Gender differences are suggested by this hypothesis. Cronbach and Meehl (1955) included group differences as one line of evidence to be used in the investigation of construct validity, along with correlations between various measures and factor analysis. Fleming and Watts (1980) described the roles of methods, such as correlations and factor analysis, versus other methods, such as group differences, in establishing discriminant validity as follows:

Logical and statistical considerations are equally important in shaping theory ... Construct relatedness

does not necessarily imply construct identity. As long as differential predictions can be made from related variables in a manner that is consistent with theory, the use of distinct constructs seems justified. (p. 922)

Several predictions were made about gender differences. First, the hypothesis says that average levels of the self-esteem and self-efficacy measures will be different for males than for females. Researchers have found conflicting evidence about gender differences in self-esteem. Fleming and Courtney (1984) and Simmons (1987) say that research finds evidence of a difference. Maccoby and Jacklin (1974) and Skaalvik (1990) have found evidence to contradict the assumption of gender differences. Notably, Skaalvik (1990) found differences between female and male adolescents in self-esteem as it applied to some but not all areas of study.

Second, the hypothesis says that the correlation between self-esteem and self-efficacy will be different for females than for males. Several researchers have found that identical predictions cannot be made across groups about the connection between self-esteem and self-efficacy. Mearns's (1989) data included correlations of 0.66 for females but only 0.56 for males between measures of general self-esteem and generalized expectancy of success. Although generalized expectancy of success bears strong resemblance to

self-efficacy, Mearns equated it with self-acceptance, in accordance with social learning theory.

The general self-esteem of females was influenced more by physical attractiveness than by physical self-efficacy; the reverse was true for men, according to a study by Lerner, Orlos, and Knapp (1976). Another gender difference was found by Mearns (1989): a measure of general self-esteem was a better predictor for men and a measure of general expectancy of success (approximating self-efficacy) was a better predictor for women of how peers would rate them on traits such as defensiveness, competitiveness and independence.

Hughes and Demo (1989) suggested that the global self-esteem of Blacks may not be as dependent on self-efficacy as in Whites because Blacks recognize that discrimination inhibits the development of efficacy. The Hughes and Demo research found that different factors predicted Blacks' self-esteem than predicted their self-efficacy. Self-esteem was best predicted by interpersonal relations within the family and community, but self-efficacy was best predicted by socioeconomic status and relations with institutions.

Lastly, the fourth hypothesis posits that females and males will differ on whether their general or specific scores will be higher within self-esteem and self-efficacy. This assumption was suggested by the higher incidence of eating disorders in females than in males and the accompanying

aberrations of self-esteem and self-efficacy. Baird and Sights (1986) and Yates (1989) concluded that 90-95 percent of the eating disordered population is female. Gross and Rosen (1988) found in a survey of high school students that bulimia was present in 2.2 percent of the females and only 0.1 percent of the males. This hypothesis suggests that relatively negative self-attitudes regarding eating behavior are more common in females in general than in males.

In the following pages, a study will be described that was designed to add to the theoretical and empirical work done in previous efforts to clarify how self-esteem and self-efficacy relate to one another. In addition, the goal was to investigate whether finer distinctions should be made within each construct on the basis of specific life-domains.

METHOD

In order to test the hypotheses, data were collected using four self-report instruments tapping: (a) general self-esteem, (b) general self-efficacy, (c) specific eating self-efficacy, and (d) specific eating self-esteem. A new eating self-esteem scale, the Self-esteem: Eating Behavior scale (SEEB) was developed in order to round out the battery of questionnaires needed to test the hypotheses. General self-esteem was measured with the Rosenberg Self-esteem scale (RSE, Rosenberg, 1965, 1979). The Eating Self-efficacy Expectations scale (ESEE, Aschman, 1989) was used to measure specific self-efficacy. General self-efficacy was tapped with the General Self-efficacy scale (GSE, Sherer et al. 1982). See instruments in the Appendix.

Subjects

Volunteers, including 107 male and 101 female undergraduate volunteers from beginning psychology courses at Iowa State University, served as subjects. Self-selection bias was minimized by posting the testing sessions as pertaining to personality variables. At the beginning of testing sessions, participants were reminded that their participation was voluntary; they were free to withdraw from testing without penalty; and, to insure confidentiality, names were not requested on the answer sheets. The only record of subjects' participation was on separate "credit cards," which

subjects filled out in order to receive extra credit in their psychology courses. Guidelines for the treatment of human subjects, as outlined by the American Psychological Association and the university, were followed. Approval for the data collection was given by the Human Subjects committees of the psychology department and the university.

Procedure

Questionnaire packets were administered in several group testing sessions. Data were collected during the sessions for several unrelated studies. Materials pertaining to this study are shown in the Appendix. Standardized general directions were included in the packet and were also read aloud. The only demographic information required for the study was gender. Subjects were asked to enter their genders on the first computer answer sheet in their packets.

It seemed likely that responses on the general measures were less likely to influence responses on the specific measures than vice-versa (cf. Shavelson et al., 1976). For that reason, the general measures were presented first in the packets. In order to control for order effects between the self-esteem and self-efficacy measures, the two general measures were inserted in alternate order, as were the two specific measures. The instruments used for this study were mixed in the packets with instruments for unrelated studies.

Instruments

Self-esteem: Eating Behavior scale (SEEB). A set of eating self-esteem items was developed and tested as part of the study. Eating self-esteem was defined as the positive or negative feelings of worth, arising from a comparison between one's actual self-concept and ideal self-concept as they pertain to eating behavior.

Rosenberg's (1979) general self-esteem scale was used as a prototype for format and content in developing the SEEB items. Two of the seven items designated as eating self-esteem items by Aschman (1989) and dropped from his eating self-efficacy scale, were included in the SEEB. Other items were developed rationally to fit the definition. Items were worded as declarative sentences and a five-point Likert scale was furnished for responses. Response options were: (a) agree strongly, (b) agree moderately, (c) neither agree or disagree, (d) disagree moderately, (e) disagree strongly.

Possible item scores range from 1 point to 5 points, and the total score is a simple cumulative. Responses were keyed in scoring so that high scores indicated high (positive) self-esteem and low scores indicated low (negative) self-esteem. Negative items 3, 4, 6, 8, 9, 11, 13, and 14 required reverse-scoring. (See Appendix.)

It was recognized that the construct of eating self-esteem covers a very narrow domain. As a result, the

SEEB has the potential to be trivial in its face validity, and test items could seem quite redundant. Therefore, it was intended that the instrument be quite brief. The goal was to have a high inter-item correlation with no need for subscale scores.

Eating Self-efficacy scale (ESEE). The ESEE (Ascheman, 1989) is a 30-item list of declarative sentences, measuring specific self-efficacy in the eating domain (See Appendix). The response format is a 5-point Likert scale, ranging from "agree strongly" to "disagree strongly." The ESEE has a range of possible scores from 30 to 150 points. In the present study the ESEE was keyed so that high scores equate with high levels of self-efficacy in the control of eating behavior. All but two items, numbers 11 and 16, were negative and consequently were reverse scored.

Ascheman (1989) found a coefficient alpha of 0.945, a mean of 92.65, and a standard deviation of 23.80 for a group of female undergraduates. He presented the following support for the construct validity of eating self-efficacy: (a) a moderate correlation with a general measure of self-efficacy, (b) stronger correlation with the general measure than with a measure of social self-efficacy, (c) relatively strong correlations with the Control factor on the California Psychological Inventory (CPI) and weak correlations with the remaining the CPI factors, and (d) strong linear trends

between the ESEE and deviations from desired and medically recommended weights.

Rosenberg Self-esteem scale (RSE). The RSE (Rosenberg, 1965) is the only one of the major measures of self-esteem that is global rather than multidimensional, according to Lorr and Wunderlich (1986). An examination of the 10 items reveals that one item, Number 4, is a self-efficacy item, according to the differentiation made here. For that reason, Item 4 was deleted before data were analyzed.

The RSE uses a 4-point Likert response format, ranging from strong agreement to strong disagreement. (See Appendix.) Although it was originally scored dichotomously, a simple summation across Likert scales yields similar results, according to Rosenberg (1979) and is often used currently (i.e., Flemming & Courtney, 1984). Simple summation scores were used here. Negative items 2, 5, 6, 8, and 9 were scored in reverse of positive items.

Wylie (1989) reviewed studies using the RSE. She found Cronbach alphas ranged from 0.72 to 0.87, with an average of 0.788; a coefficient of reproducibility of 0.92; and test-retest coefficients of 0.85 after two weeks, 0.63 after seven months, and 0.91 when tested first in Spanish and then in English. As was mentioned above in the Introduction, factor analyses have led to conflicting conclusions about whether the RSE includes two factors - positive and negative

self-esteem. Wylie (1989) reported a number of indicators of construct validity, including significant correlations between the RSE and such things as depression, anxiety, locus of control, and popularity.

General Self-efficacy scale (GSE). Sherer's original two-factor Self-efficacy Scale (Sherer et al., 1982) contains 30 items, with seven filler items. Seventeen of the items measure a general self-efficacy factor, without reference to a specific behavioral domain. The remaining six items measure efficacy expectations in social situations. Since one of the central purposes of this study was to contrast general self-efficacy expectation with a more specific self-efficacy expectation, only the 17-item general self-efficacy subscale was used in data analysis. The scale is referred to here as the General Self-efficacy scale (GSE). All 30 items are shown in the Appendix, because the entire instrument was presented in the packet in order to collect data for an unrelated study. Items 4, 7, 10, 14, 18, and 21 were not included in the data analysis, since they refer to social self-efficacy.

Responses to the items were made on a 5-point Likert scale, in contrast to the 16-point scale used by Sherer et al. (1982). Scores were simple additives of Likert points and items were keyed so that high scores indicated high expectations for self-efficacy. Negative items 2, 5, 6, 8, 9,

13, 15, 16, 19, 22, and 23 were scored in the reverse direction of the other positive items.

The general self-efficacy subscale had a Cronbach alpha of 0.86 (Sherer et al., 1982). Construct validity was examined by Sherer et al. (1982) in terms of correlations of the entire scale with locus of control, ego strength, interpersonal competency, self-esteem, and social desirability. The general self-efficacy subscale demonstrated criterion validity by correlating with past success in vocational, educational, and military undertakings (Sherer et al., 1982). Sherer and Adams (1983) offered further construct validation by confirming predictions of the relationship of their scale with several other personality measures.

RESULTS

Analysis of the Self-esteem: Eating Behavior scale

The preliminary step of the study was to do an item analysis of the newly developed Self-esteem: Eating Behavior scale (SEEB) and to derive a final form of the instrument before the hypotheses were tested. Fourteen items were tested, including two items Ascheman (1989) designated as eating self-esteem items and 12 additional items developed rationally to fit the definition of eating self-esteem. All of the 14 original items are listed in Table 1. See Table 2 for item statistics. The number of subjects who responded to the various items ranged from 203 to 208. A 5-point Likert scale was used and item responses ranged from 1 to 5 on all 14 items. Scoring was keyed so that high scores would indicate high self-esteem regarding eating behavior. Reverse-scored items are indicated in Table 2.

Mean item responses ranged from a low of 3.00 for Item 5 (My daily diet shows I am a strong person.) to a high of 4.22 for Item 4 (I don't like myself because of the way I eat.). With the exception of Item 13, which correlated -0.05 with the total score, item/total correlations ranged from 0.40 to 0.78 (Table 2). It was decided that the cutoff for inclusion would be 0.40, thus, Item 13 was eliminated. All 14 of the original items yielded an alpha of 0.89. The exclusion of Item 13 raised the alpha to 0.91, well above the 0.80 minimum

Table 1. Original 14 Items of the Self-esteem: Eating Behavior Scale (SEEB)

-
1. I feel good about my eating habits.
 2. I eat as sensibly as most people.
 3. Eating and guilt go together for me.
 4. I don't like myself because of the way I eat.
 5. My daily diet shows I am a strong person.
 6. I feel guilty when I overeat.
 7. I am satisfied about my daily food intake.
 8. I don't want others to know how much I eat.
 9. I often feel self-critical because of my daily diet.
 10. I am proud of myself, when it comes to my diet.
 11. I hate myself when I fall off an easy diet.
 12. Eating does not affect how good I feel about myself.
 13. I feel guilty when I don't eat enough.
 14. I sometimes get angry at myself while I am eating.
-

Table 2. Item Statistics for Development of Self-esteem:
Eating Behavior Scale (SEEB, $N = 208$)

Item	Mean	SD	Correlation with total	Alpha w/o item
1	3.50	1.36	0.76	0.87
2	3.73	1.26	0.63	0.88
3*	3.78	1.25	0.57	0.88
4*	4.22	1.10	0.69	0.88
5	3.00	1.16	0.40	0.89
6*	3.11	1.49	0.62	0.88
7	3.43	1.25	0.66	0.88
8*	3.79	1.25	0.58	0.88
9*	3.57	1.30	0.78	0.87
10	3.03	1.24	0.61	0.88
11*	3.50	1.24	0.62	0.88
12	3.09	1.42	0.50	0.89
13*	3.86	1.16	-0.05	0.91
14*	4.05	1.23	0.67	0.88

Note. An * denotes an item that was reverse-scored.

recommended by Sattler (1988). Item 13 was the only item deleted, since it was the only deletion that raised the coefficient alpha rather than lowering it.

Mean total score and standard deviation for the final 13 items were 45.77 and 11.50, respectively. The range of total scores was 13 to 65. The mean response for all 13 items was 3.52 with a standard deviation of 0.88.

Statistics on Other Instruments

Rosenberg Self-esteem scale. The measure of general self-esteem, the Rosenberg Self-esteem scale (RSE, Rosenberg, 1979), uses a four-point Likert scale so that the total possible score on the 10 original items is 40 points. See the RSE in the Appendix. The mean total score for the RSE in the present study was 32.91, with a standard deviation of 5.0. The alpha coefficient was 0.86. In her latest review of research using the RSE, Wylie (1989) found no descriptive statistics reported for Likert scoring. Wylie reported alpha coefficients ranging from 0.72 to 0.87 in widely varied population samples.

In the present study, RSE Item 4 was deleted from the data analysis of the hypotheses. Item 4 reads, "I am able to do things as well as most people." Since this item seems to fit the description being used here for general self-efficacy rather than general self-esteem, it was decided that its inclusion could confound the correlation between the two

measures. Without Item 4, the mean score was 32.89, the standard deviation was 5.13, and the alpha coefficient was 0.86.

Eating Self-efficacy Expectations scale. Eating self-efficacy was measured with Ascheman's (1989) Eating Self-efficacy Expectations scale (ESEE). The mean score in the present study was 109.01, with a standard deviation of 25.88. Ascheman (1989) reported a mean score of 92.64, with a standard deviation of 23.80. The coefficient alpha for the ESEE in the present study was 0.96, as compared to 0.95 reported by Ascheman (1989).

General Self-efficacy scale. The 17-item General Self-efficacy subscale (GSE) of the instrument developed by Sherer and his colleagues (1982) yielded a mean score of 62.61 and a standard deviation of 9.14 in the present study. The alpha coefficient was 0.84. Both the present study and a study by Sherer and Adams (1983) used a 5-point Likert scale and a sample of college students. Sherer and Adams reported a mean of 64.31, a standard deviation of 8.58 and an alpha coefficient of 0.86.

Tests of hypotheses

Data from the same data collection were used to test the hypotheses as were used for the SEEB item analysis. However, as was stated above, data from one SEEB item were eliminated before the tests were run. One RSE item was also dropped from

the data set, as explained above. Only the general self-efficacy subscale of the GSE was used.

The 208 subjects' data were checked for missing responses on each of the four instruments. Data from all subjects met the criteria for being retained in the study. The following criteria were used: (a) no more than 3 of 30 items missed on the ESEE, (b) no more than 2 of 14 items missed on the SEEB, (c) no more than 2 of 17 items missed on the GSE, and (d) no more than 1 of 10 items missed on the RSE. Data for missing items were extrapolated using the average score for the subject on all of the remaining items for the scale.

Hypothesis 1. It was proposed that self-esteem and self-efficacy can be viewed as separate constructs, both when measured generally or when measured in a specific domain, such as eating behavior. First, the hypothesis was tested by looking at the intercorrelations between the two general measures (RSE/GSE) and between the two specific measures (SEEB/ESEE). See Table 3. The two intercorrelations were expected to be moderately strong. Zeller (1988, p. 325) termed a correlation of 0.64 as "relatively strong" and that level of correlation will be used as a benchmark in the present study. The relatively strong correlations are expected because self-esteem and self-efficacy are seen as separate, but closely related constructs. The results show a surprisingly low correlation between general self-esteem and

Table 3. Pearson Correlations Between RSE, SEEB, GSE, and ESEE
($N = 208$)

Measures	RSE	SEEB	GSE	ESEE
RSE	1.00	0.30***	0.41***	0.36***
SEEB		1.00	0.05	0.80***
GSE			1.00	0.13*
ESEE				1.00

Note. RSE = Rosenberg General Self-esteem scale; SEEB = Self-esteem: Eating Behavior scale; GSE = General Self-efficacy scale; ESEE = Eating Self-efficacy Expectation scale.

*** $p < .0001$

* $p < .0500$

general self-efficacy (i.e., only 0.41). Although lower than the 0.64 benchmark, the 0.41 general/general correlation is not so low as the 0.32 that Zeller (1989, p. 325) calls "relatively weak". On the other hand, the 0.80 specific correlation exceeded the moderately high 0.64 benchmark.

In addition, it was expected that the internal consistency (i.e., the alpha coefficient) on a measure of either of the two constructs would be higher than the intercorrelation between measures of the two constructs. This prediction held true for both the general constructs and specific constructs. The alphas for both general measures, 0.86 for the RSE and 0.84 for the GSE, were higher than the 0.41 correlation between the RSE and GSE. The alphas for both specific measures, 0.91 for the SEEB and 0.96 for the ESEE, were also higher than the 0.80 correlation between the SEEB and the ESEE. In other words, the internal consistency within each of the measures/constructs was greater than the relationship between constructs.

Hypothesis 2. The second hypothesis says that general measures of self-esteem and self-efficacy are expected to have a lower correlation than measures of the two constructs in a specific domain such as eating behavior. The correlation matrix in Table 3 shows that the general-general correlation of 0.41 is lower than the 0.80 specific-specific correlation. Steiger's (1980) Z^* test for equality of dependent

correlations with no common index was used. The correlations being compared are said to be dependent because they are measured using the same subjects (Steiger, 1980). "No common index" refers to the fact that each of the two correlations being compared reflects a relationship between two entirely different "indices" or measures. The significance of the difference between the correlations was confirmed [$Z^* = 6.89$, $p < .0001$].

Hypothesis 3. The third hypothesis suggested that the most dependable predictions about the level of one construct can be made on the basis of the other construct, if they are both general or both specific. Stated otherwise, the accuracy of the general-general or specific-specific predictions across constructs will exceed that of general-specific predictions within a construct. For example, an individual's level of general self-esteem should best be predicted by the level of general self-efficacy, rather than by either specific self-esteem or specific self-efficacy.

The tests for this hypothesis again make use of the correlation matrix in Table 3. If the hypothesis was true, the correlations between the two specific measures would be significantly higher than the correlations between any of the four possible pairs of specific and general measures. The hypothesis also implies that the correlations between the two

general measures should be significantly higher than the four possible specific-general correlations.

A Z test for equality of dependent correlations with one index in common was used (Meng, Rosenthal, & Rubin, 1992). This test has the advantage of being much simpler to implement than Steiger's (1980) T tests for the same purpose. "Common index" refers to the fact that the two correlations being compared have one measurement in common. In the case of the comparisons of the general-general correlation to the general-specific correlations, both correlations incorporate data from the same general measurement.

Meng and his colleagues (1992) reiterated Steiger's (1980) warnings to researchers about continued reliance on Hotelling's t test for testing dependent correlations. Steiger (1980) said, Hotelling's t test "is basically useless as a replacement for Z with any size sample because it does not have the designated distribution or even come close to it" (p. 246).

In all four cases, the specific-specific correlation was significantly higher than any of the four specific-general correlations. See Table 4 for the results of comparisons of the four specific-general correlations with the correlation between specific eating self-esteem and eating self-efficacy (SEEB/ESEE = 0.80). The results are:

- 1) The specific eating self-efficacy and general self-

Table 4. Tests for Significant Differences (Meng et al., 1992)
Between the Specific/Specific Correlation Versus the
Specific/General Correlations ($N = 208$)

Specific/Specific versus Specific/General	r values	Z
SEEB/ESEE vs. ESEE/GSE	0.80 vs. 0.13	9.45***
SEEB/ESEE vs. SEEB/RSE	0.80 vs. 0.30	8.78***
SEEB/ESEE vs. ESEE/RSE	0.80 vs. 0.36	7.84***
SEEB/ESEE vs. SEEB/GSE	0.80 vs. 0.05	10.63***

Note. SEEB = Self-esteem: Eating Behavior scale; ESEE = Eating Self-efficacy Expectancy scale; GSE = General Self-efficacy scale; RSE = Rosenberg General Self-esteem scale.

*** $p < .0001$.

efficacy correlation ($ESEE/GSE = 0.13$) was significantly lower than 0.80 [$Z = 9.45$, $p < .0001$].

2) The specific eating self-esteem and general self-esteem correlation ($SEEB/RSE = 0.30$) was significantly lower than 0.80 [$Z = 8.78$, $p < .0001$].

3) The specific eating self-efficacy and general self-esteem correlation ($ESEE/RSE = 0.36$) was significantly lower than 0.80 [$Z = 7.85$, $p < .0001$].

4) The specific eating self-esteem and general self-efficacy correlation ($SEEB/GSE = 0.05$) was significantly lower than 0.80 [$Z = 10.63$, $p < .0001$].

Results were not as consistently supportive of the hypothesis, when the general-general correlation was contrasted to the four general-specific correlations. Table 5 summarizes the results of comparisons of the four specific-general correlations with the correlation between general self-esteem and general self-efficacy ($RSE/GSE = 0.41$). The results are:

1) The general self-efficacy and specific self-efficacy correlation ($GSE/ESEE = 0.13$) was significantly lower than 0.41 [$Z = 3.63$, $p < .0001$].

2) The general self-esteem and specific self-esteem correlation ($RSE/SEEB = 0.30$) was not significantly lower than 0.41 [$Z = 1.25$, $p = .106$].

3) The general self-efficacy and specific self-esteem

Table 5. Tests for Significant Differences (Meng et al., 1992)
Between the General/General Correlation Versus the
General/Specific Correlations (N = 208)

General/General versus General/Specific	r values	Z
RSE/GSE vs. GSE/ESEE	0.41 vs. 0.13	3.63***
RSE/GSE vs. RSE/SEEB	0.41 vs. 0.30	1.25
RSE/GSE vs. GSE/SEEB	0.41 vs. 0.05	4.44***
RSE/GSE vs. RSE/ESEE	0.41 vs. 0.36	0.55

Note. RSE = Rosenberg General Self-esteem scale; GSE = General Self-efficacy scale; ESEE = Eating Self-efficacy scale; SEEB = Self-esteem: Eating Behavior scale.

*** $p < .0001$.

correlation ($GSE/SEEB = 0.05$) was significantly lower than 0.41 [$Z = 4.44$, $p < .0001$].

4) The general self-esteem and specific self-efficacy correlation ($RSE/ESEE = 0.36$) was not significantly lower than 0.41 [$Z = 0.55$, $p = .291$].

Hypothesis 4. This hypothesis addresses gender differences and has three parts. Tests for differences were based on $N = 101$ for females and $N = 107$ for males. First, it was suggested that the average levels of the four measures would be different for females than for males. The results of four ANOVA's (Table 6) indicated that there was a significant difference between females and males on the eating specific measures of self-esteem and self-efficacy, but not on the general measures of the two constructs.

Table 6 indicates that, on the eating-specific measure of self-esteem (SEEB), the mean score for females was 41.93, $SD = 12.41$; and the mean for males was 49.38, $SD = 9.25$. Thus the males scored significantly higher on eating self-esteem [$F(1, 206) = 24.29$, $p < .0001$].

Females had a mean score of 102.32, $SD = 28.14$, on the eating-specific self-efficacy measure (ESEE). The ESEE mean for males was 115.32, $SD = 21.86$. As with eating self-esteem, males also reported a significantly higher sense of eating self-efficacy [$F(1, 206) = 13.93$, $p < .0001$], as seen in Table 6.

Table 6. Analyses of Variance in Mean Scores on the SEEB, ESEE, RSE, and GSE, by Gender

Measures	Females		Males		F
	(N = 101)		(N = 107)		
	M	SD	M	SD	
SEEB	41.93	12.41	49.38	9.25	24.29***
ESEE	102.32	28.14	115.32	21.86	13.93***
RSE	32.76	5.26	33.01	5.01	0.12
GSE	62.72	8.95	62.49	9.34	0.03

Note. SEEB = Self-esteem: Eating Behavior scale,
 ESEE = Eating Self-efficacy Expectations scale, RSE =
 Rosenberg Self-esteem scale, GSE = General Self-
 efficacy scale.

*** $p < .0001$.

Unlike the disparate specific means, the mean scores on the two general constructs were nearly the same for the genders, (Table 6). The general self-esteem (RSE) mean for females was 32.76, $SD = 5.26$; and for males was 33.01, $SD = 5.01$. No statistical significance is attributed to the RSE difference [$F(1, 206) = 0.12, p = 0.72$]. The general self-efficacy (GSE) mean for females was 62.72, $SD = 8.95$; and for males was 62.49, $SD = 9.34$. The difference in GSE scores was also not significant [$F(1, 206) = 0.03, p = 0.856$].

The second part of this hypothesis says that the correlations between self-esteem and self-efficacy measures will be different for females than they are for males. Correlations among the four measures were calculated separately for females and for males and are shown in Table 7. In this case, a z test for equality between independent correlations was used (Howell, 1987). None of the differences between the female and male correlations approached significance (Table 8). The biggest difference was between the specific-specific correlations. The results of the tests, in order of significance are:

- 1) The specific eating self-esteem and eating self-efficacy correlation (SEEB/ESEE) for females was 0.81 and for males was 0.75. The difference is nonsignificant [$z = 1.20, p = 0.115$].

- 2) The specific eating self-esteem and general self-

Table 7. Pearson Correlations Between RSE, SEEB, GSE, and ESEE for Females ($n = 101$) and Males ($n = 107$)

Measures	RSE	SEEB	GSE	ESEE
RSE	----	0.26**	0.41***	0.37***
SEEB	0.37***	----	0.07	0.81***
GSE	0.40***	0.05	----	0.20*
ESEE	0.37***	0.75***	0.08	----

Note. RSE = Rosenberg General Self-esteem; SEEB = Self-esteem: Eating Behavior; GSE = General Self-efficacy; ESEE = Eating Self-efficacy Expectation.

Correlations for females are above the diagonal.

Correlations for males are below the diagonal.

*** $p < .0001$

** $p < .0100$

* $p < .0500$

Table 8. Tests for Significant Differences (Howell, 1987)
Between Correlations of All Possible Pairs of
Measures, by Gender

Correlation	Female r ($n = 101$)	Male r ($n = 107$)	z
SEEB/ESEE	0.81	0.75	1.20
SEEB/RSE	0.26	0.37	-0.90
ESEE/GSE	0.20	0.08	0.85
SEEB/GSE	0.07	0.04	0.19
RSE/GSE	0.41	0.40	0.45
ESEE/RSE	0.366	0.369	0.03

Note. SEEB = Self-esteem: Eating Behavior scale;
ESEE = Eating Self-efficacy Expectancy scale; RSE =
Rosenberg General Self-esteem scale; GSE = General
Self-efficacy scale.

esteem correlation (SEEB/RSE) for females was 0.26 and for males was 0.37, yielding a nonsignificant difference [$z = -0.90$, $p = 0.184$]. This is the only relationship that was stronger for males than it was for females.

3) The specific eating self-efficacy and general self-efficacy correlation (ESEE/GSE) was 0.20 for females and was 0.08 for males, a difference which is not significant [$z = 0.85$, $p = 0.199$].

4) The specific eating self-esteem and general self-efficacy correlation (SEEB/GSE) was 0.07 for females and 0.04 for males, a difference which is not significant [$z = 0.19$, $p = 0.423$].

5) The general self-esteem and general self-efficacy correlation (RSE/GSE) was 0.41 for females and 0.40 for males, a nonsignificant difference [$z = 0.13$, $p = 0.449$].

6) The specific eating self-efficacy and general self-esteem correlation was 0.369 for females and 0.363 for males, a nonsignificant difference [$z = 0.03$, $p = 0.492$].

Lastly, Hypothesis 4 says that females and males will differ on whether they score higher on general or specific aspects of the two constructs. This difference was confirmed. While the overall frequency of marked differences between general and specific differences was not dependent on gender, the frequency of particular high/low pairs did depend on gender.

Before these final several tests were run, scores on all measures were standardized (mean = 50, $SD = 10$). Differences between the scores on the general and specific self-esteem measures were then figured for each individual. Such differences were also figured for the general and specific self-efficacy scores. Mean differences were then calculated by gender.

The mean difference between general self-esteem and eating self-esteem scores for females was 3.08 points and for males was -2.91. The female mean difference is a positive number because it reflects general self-esteem scores that are higher on average than eating self-esteem scores. Males, on the other hand, have a negative mean difference because their general self-esteem scores were on average lower than their eating self-esteem scores. As shown in Table 9, an ANOVA confirms the significance of this difference [$F(1, 206) = 14.10, p < .0002$].

The mean differences between general self-efficacy and eating self-efficacy showed a similar but slightly less extreme pattern. Females had a mean difference of 2.71. Males had a mean difference of -2.56. Table 9 also summarizes the ANOVA on efficacy general/specific differences [$F(1, 206) = 8.66, p < .0036$].

In order to compare frequencies of discrepancies between scores by gender, a difference of 10 points, or one standard

deviation, was set as the criterion of a marked difference. First chi-square analyses were done on the gender-dependence of the frequency of discrepancies, regardless of whether the general or specific measure was higher. Between the two self-esteem measures, 38 of 101 females had discrepancies of at least 10 points, and 33 of 107 males had such discrepancies. The prediction that the number of discrepancies was dependent on gender was not supported [$\chi^2(1, N = 208) = 1.06, p < .30$]. See Table 10. On the two self-efficacy measures, 44 of 101 females had discrepancies of 10 or more points, and 40 of 107 males had similar discrepancies (Table 11). Again, the frequency of discrepancies was not dependent on gender [$\chi^2(1, N = 208) = 0.825, p < .364$].

Remarkably, while females and males had nearly the same frequencies of overall 10-point or higher discrepancies, their specific discrepancy profiles were nearly mirror images. For females, it was most often the general measures that were 10 or more points higher than the specific measures. The reverse was true for males (i.e., specific measures were higher than general measures).

In the case of self-esteem, whether the specific or general measure was higher was highly dependent on gender [$\chi^2(1, N = 71) = 10.50, p < .0001$]. Where there was a discrepancy of 10 or more points between specific and general self-esteem, 25 of 38 females had higher scores on the general

Table 9. Analyses of Variance in Mean Differences Between RSE and SEEB, and Between GSE and ESEE, by Gender

Mean Score Difference	Female (<i>n</i> = 101)		Male (<i>n</i> = 107)		<i>F</i>
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	
RSE - SEEB	3.08	12.83	-2.91 ^a	10.09	14.10**
GSE - ESEE	2.71	13.13	-2.56	12.73	8.66*

Note. RSE = Rosenberg General Self-esteem scale; SEEB = Self-esteem: Eating Behavior scale; GSE = General Self-efficacy scale; ESEE = Eating Self-efficacy Expectation scale.

^aMean negative values indicate the general measure is lower than the specific measure, and vice-versa for positive values.

***p* < .001.

**p* < .01

Table 10. Frequency of 10-Point or Greater RSE-SEEB Standard Score Discrepancies Versus Smaller Discrepancies, by Gender

RSE-SEEB Discrepancy Description	Female		Male		Total	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
10 pts. or more	38	18.27	33	15.87	71	34.13
Less than 10 pts.	63	30.29	74	35.58	137	65.87

Note. $\chi^2(1, N = 208) = 1.06, p = .30$. RSE =

Rosenberg General Self-esteem scale; SEEB = Self-esteem: Eating Behavior scale.

Table 11. Frequency of 10-Point or Greater GSE-ESEE Standard Score Discrepancies Versus Smaller Discrepancies, by Gender

GSE-ESEE Discrepancy Description	Female		Male		Total	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
10 pts. or more	44	21.2	40	19.2	84	40.3
Less than 10 pts.	57	27.4	67	32.2	124	59.6

Note. $\chi^2(1, N = 208) = 0.83, p = .36$. GSE = General Self-efficacy scale; ESEE = Eating Self-efficacy scale.

self-esteem measure (RSE). The higher score for males was more likely to be the specific eating self-esteem measure (SEEB); that is 24 of the 33 males who had 10-point discrepancies. See Table 12.

As with self-esteem scores, a similar but less marked pattern of discrepant general and eating-specific self-efficacy scores emerged [$X^2(1, N = 84) = 4.72, p < .05$]. See Table 13. Females were more likely to have 10 or more point self-efficacy discrepancies where the higher self-efficacy score was in the general measure (GSE), with 27 of 44 females having such discrepancies. On the other hand, 25 of 40 males with 10 or more point discrepancies scored higher on the specific eating self-efficacy measure (ESEE).

When standardized with a mean of 50 and a standard deviation of 10, scores on the four measures fall into a clear gender pattern (Figure 1). General self-esteem (RSE) standard means are nearly equivalent for the genders, 50.2 for females and 49.7 for males. By contrast, the standard mean for the eating-specific self-esteem (SEEB) is lower than the general self-esteem mean for females (46.7), but is higher for males (53.1).

The same pattern holds for the general versus the eating-specific measures of self-efficacy (Figure 1). Females and males have nearly equivalent standard means for general self-efficacy (GSE), 50.1 and 49.9, respectively. Again, the

Table 12. Frequency of 10-Point or Greater Standard Score Discrepancies, with RSE>SEEB or SEEB>RSE, by Gender

Discrepancy Description	Females		Males		Total	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
RSE>SEEB	25	35.2	9	12.7	34	47.9
SEEB>RSE	13	18.3	24	33.8	37	52.1

Note. $\chi^2(1, N = 71) = 10.5, p < .001$. RSE = Rosenberg General Self-esteem scale; SEEB = Self-esteem: Eating Behavior scale.

Table 13. Frequency of 10-Point or Greater Standard Score Discrepancies, with GSE>ESEE or ESEE>GSE, by Gender

Discrepancy Description	Females		Males		Total	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
GSE>ESEE	27	32.1	15	17.9	42	50.0
ESEE>GSE	17	20.2	25	29.8	42	50.0

Note. $\chi^2(1, N = 84) = 4.77, p < .05$. GSE = General Self-efficacy scale; ESEE = Eating Self-efficacy scale.

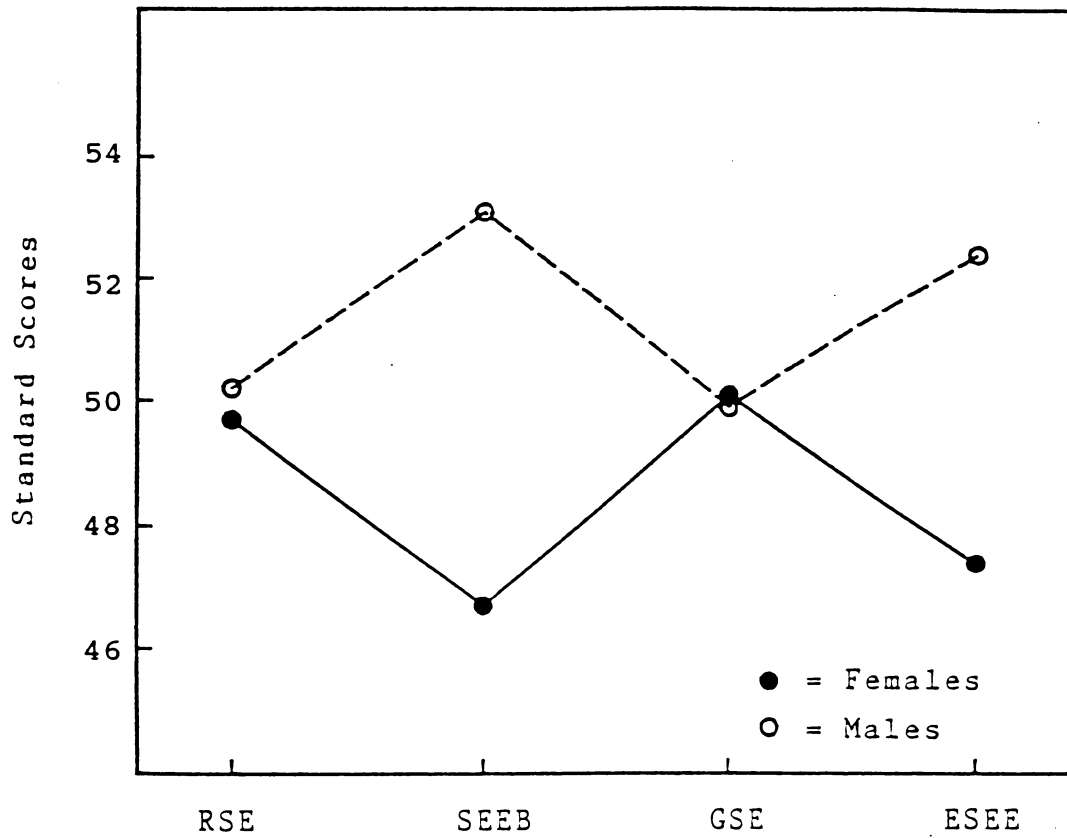


Figure 1. Comparison of Female to Male Standard Scores on General Self-esteem (RSE), Eating Self-esteem (SEEB), General Self-efficacy (GSE), and Eating Self-efficacy (ESEE)

standard mean for eating-specific self-efficacy (ESEE) is lower than the general self-esteem mean for females (47.4), but is higher for males (52.4).

DISCUSSION

The primary purpose of this study was to clarify the relationship of self-esteem and self-efficacy. Secondly, the global versus the domain-specific distinction within the two constructs was examined.

Several of the five approaches to construct validation suggested by Cronbach and Meehl (1955) in their seminal article were implemented in the present study. First, as they suggested, correlations were checked to see if instruments relate as expected, according to the hypothesized similarity or difference in the constructs the instruments were designed to measure. Second, internal consistency or homogeneity of the instruments was used as an indicator of construct validity, under the assumption that the constructs measured are unidimensional and should have high internal consistency. Third, group differences, specifically gender differences, were used as positive or negative evidence of construct validity in so far as the differences fit the understanding of the constructs.

Instrumentation

Instruments were found in the literature to measure general self-esteem (RSE, Rosenberg, 1979), general self-efficacy (GSE, Sherer et al., 1982), and specific eating self-efficacy (ESEE, Ascheman, 1989). The only necessary instrument not already available was one that would measure

self-esteem in the domain of eating behavior. The SEEB was developed as a means to that specific end, rather than as an instrument that was expected to have widespread utility in other research or for clinical applications. As such, it seemed to meet the needs for which it was designed. A short, homogeneous instrument was desired. The final form of the SEEB is 13-item questionnaire. For such a short questionnaire, it had high internal consistency or homogeneity (Cronbach alpha = 0.91).

In general, the instrumentation of the study seemed to have adequate reliability, with means and standard deviations from the RSE, GSE, and ESEE being within a reasonable range of the statistics from other studies. The results, as discussed below, also could be interpreted as contributing to the evidence of the various instruments' validity, in so far as the expected relationships between self-esteem and self-efficacy were supported by data.

First hypothesis

The first hypothesis, stating that self-esteem and self-efficacy are different constructs, though closely related, received only partial support from the data. Furthermore, the data supported different parts of the hypothesis for the general and specific constructs.

In the case of general self-efficacy and self-esteem, the correlation was low enough as to leave little doubt that the

instruments were measuring different constructs, but the suggestion that they are closely related was not supported. The fact that the correlation was even lower than the prediction of a moderately strong relationship, calls into question the tendency of some researchers (e.g., Lorr & Wunderlich, 1986) to develop questionnaires meant to tap "a sense of self-confidence and efficacy" (p. 19) and then call it a measure of self-esteem. By contrast, the finding is in agreement with Motowidlo (1979), who found that items designed to tap a general self-evaluation (similar to self-esteem) could be factored out of his self-competence (i.e., self-efficacy) scale. Consequently, it may also be assumed that one's overall sense of competence (self-efficacy) does not closely correspond to one's overall feelings of self-worth (self-esteem).

A quite different conclusion can be drawn about the two eating-specific constructs. In this case, the self-esteem/self-efficacy correlation was higher than expected, leaving little doubt that they are closely related but raising questions about whether the instruments measured separate constructs. This strong relationship is not surprising in light of the fact that they measure attitudes toward self in exactly the same behavioral domain. Thus, as a rule, a person's expectations about how competent she or he is in controlling eating behavior translate fairly directly into how

good or bad she or he feels about her- or himself in the domain of eating behavior. This finding does not support Ascherman's (1989) decision to delete eating self-esteem items from his eating self-efficacy scale. It would seem, at least in the domain of eating behavior, that self-esteem and self-efficacy cannot be clearly discriminated from one another.

Second hypothesis

This hypothesis suggested that specific measures of self-esteem and self-efficacy will have a stronger relationship than general measures of the two constructs. In accordance with the second hypothesis, the correlation between specific eating self-esteem and eating self-efficacy was significantly higher than the correlation between general self-esteem and general self-efficacy.

The finding that general self-esteem and general self-efficacy were less closely related than the eating-specific measures could be interpreted as support for the hierarchical model of self-concept (Shavelson et al., 1976), and the distinction made by Mead (1932) and Symonds (1951) between concepts of self as a passive object versus concepts of self as an active behavioral subject. Shavelson's model suggests that general self-esteem subsumes general self-efficacy, because feelings of self-worth (self-esteem) take into consideration perceptions about competence in behavioral domains (self-efficacy) and also other perceptions about self

in nonbehavioral domains. In other words, self-efficacy perceptions include concepts about self as an active behavioral subject; while, self-esteem includes both concepts about self as an active subject and as a passive object. Hence, general self-esteem and general self-efficacy do not reflect self-attitudes in exactly the same domains and cannot be expected to be extremely highly correlated. Eating self-esteem and eating self-efficacy, on the other hand, are impacted by self-perceptions in exactly the same behavioral domain and are more highly correlated.

The correlation found here between the general constructs fell in the middle of a range of correlations reported by Lorr and Wunderlich (1986), and Motowidlo (1979) between constructs that were similar (but not identical) to constructs in the present study. The specific/specific correlation in this study was very close to that reported by Aschman (1989), who used the same measure of eating self-efficacy and a less developed measure of eating self-esteem.

Third hypothesis

The third hypothesis predicted that levels of self-esteem and self-efficacy are most strongly related when they both tap general self-attitudes or both tap specific self-attitudes. Evidence was found in testing the third hypothesis to back up theoretical assertions (Wylie, 1987) and empirical findings by researchers (Fleming & Watts, 1980; Jordan, 1981; Rosenberg,

1979) that it is undependable to generalize about levels of self-esteem or self-efficacy from specific to general measures or vice-versa.

In every case, the correlation between the measures of specific eating self-esteem and eating self-efficacy was higher than correlations between any specific-general pair. In the light of these comparisons, it would be particularly unwise to generalize from a high or low score on one of the specific measures to an assumption that an individual would also exhibit a corresponding level of general self-esteem or general self-efficacy. It would, however, be somewhat more accurate to generalize from specific self-esteem to specific self-efficacy. On the basis of the 0.80 SEEB/ESEE correlation, 64 percent of the variance in the two specific measures is shared.

It is less clear what conclusion can be drawn from the difference between the general-general correlation as compared to any general-specific correlation. As a rule, it would seem that predictions from general to general measure are questionable and in some cases are not noticeably better than a general-specific prediction. The 0.41 RSE/GSE correlation means that the measure of general self-esteem and general self-efficacy have only 17 percent of their variances in common. The general-general correlation is significantly higher than the correlations of specific self-efficacy with

either general measure, but is not statistically higher than the correlations of specific self-esteem with either general measure. Statistically, general self-efficacy seems to be an even poorer predictor of the specific measures than does general self-esteem. In the final analysis, what this seems to mean is that it is questionably safe to predict from specific to specific, considerably less safe to predict from general to general, and inadvisable to predict from specific to general or vice versa. With these caveats in mind, the prediction remains accurate that it is safer to generalize across constructs from specific to specific or from general to general, than it is to generalize from specific to general, or vice versa, within a construct.

Fourth hypothesis

The first part of this hypothesis (i.e., that average levels of the measures would be different according to gender) turned out to be clearly supported in the case of the measures in the specific eating domain. From a general perspective, it was just as clear that no significant gender difference was present.

Females reported having less positive attitudes toward themselves in the domain of eating than did males. In addition, the fact that females' mean scores had larger standard deviations indicates they show more individual variation. These comparatively lower scores in eating self-

esteem and eating self-efficacy for females are probably related to the higher incidence of disordered eating behaviors for females (Baird & Sights, 1986; Yates, 1989).

The lack of gender differences in general self-esteem agrees with the findings of Fleming and Courtney (1984), but differs from the findings of Simmons (1987). The lack of consistency in these findings is largely explained by differences in the populations tested. Fleming and Courtney (1984) reported a lack of gender difference and also tested college students, as did the present study. Unlike the present study, Simmons (1987) studied preadolescent and adolescent girls and boys and her findings were in conflict with the results reported here.

Reports on gender comparisons of levels of general self-efficacy were not found in the literature. It is therefore doubly important to note that the present sample of college students showed no significant gender difference.

The second hypothesized gender difference did not materialize. In the present sample, no significant gender differences were found for the correlations between any pair of measures. Notably, the correlations between general self-esteem and general self-efficacy were virtually identical for females and males. Gender similarity in the relationship between general self-esteem and general self-efficacy could mean that general competence or self-efficacy is equally as

important to the general self-esteem of women and men in college.

This similarity is not undisputed, however. Mearns's (1989) study of college students found a much greater gender difference in correlations between general self-esteem measured with the RSE and generalized expectancy of success (similar but not identical to general self-efficacy) than the present study. It should be kept in mind that such similarities or differences are influenced by the prevailing social climate and as a result can change over time and from one location to another.

The difference in the correlations between the two constructs in the specific eating domain also was not significant, although the relationship between eating self-efficacy and eating self-esteem was stronger in females. While it is only conjecture, it seems likely that the reason for this nonsignificant trend is that assessment of one's competence to control eating has a stronger emotional impact on women and thus more impact on the emotional aspect of their self-concepts, namely self-esteem.

The last hypothesized difference between the genders predicted that males and females would have different patterns of high scores on the general and specific measurements of the two constructs. This prediction was also made on the basis of the higher incidence of eating disordered behaviors in females

(Baird & Sights, 1986; Yates, 1989). It was found that females were more likely to have higher scores on general self-esteem and self-efficacy, compared to their scores on eating-specific self-esteem and self-efficacy. In a reverse pattern, males were more likely to have higher scores on the eating-specific measures of the two constructs. The fact that males' and females' levels of general self-esteem and general self-efficacy were not significantly different would indicate that the mean scores lie on a hierarchy. Males' eating self-esteem and self-efficacy is at the first or highest level. On the second or middle level, fall both females' and males' general self-esteem and self-efficacy. On the third or lowest level, fall females' eating self-esteem and eating self-efficacy.

Conclusions

In summary, the present findings point to several inferences about self-esteem and self-efficacy. First, general self-esteem and general self-efficacy appear to be separate constructs that are not especially closely related. On the other hand, eating-specific self-esteem and self-efficacy are very closely related and may not be separate constructs.

Second, generalizations about levels of either construct from its general aspect to its specific aspect as it applies to eating behavior are not advisable. It also cannot be

assumed that the level of general self-esteem will predict the level of general self-efficacy (or vice versa) with much accuracy.

Finally, females seem to be caught in a bind of relatively negative self-attitudes about their eating behavior, while males are relatively free from self-doubt about eating behaviors. The data seem to confirm the popularly recognized difference between diet and weight preoccupation of females and males. It is not surprising that the eating domain is more problematic for females than for males in the sample. Women seem to be especially susceptible to negative cultural messages that exacerbate feelings of loss of control and self-disgust about eating, which could be a pleasurable part of their lives. Women may take some comfort, however, in the findings that general self-esteem does not seem to be closely related to eating self-esteem in the general college population.

Limitations of the study

The findings in the present study should not be generalized to populations other than college students, and the generalizeability to other college student populations cannot be assumed without replication. In addition, the conclusions about the relatively strong relationship between the eating-specific measures of self-esteem and self-efficacy may be confounded by the unavoidable similarity of the two

instruments and any response set that carried over from one instrument to the other. The validity of the conclusions are also limited by the fact the one of the instruments (i.e., the Self-esteem: Eating Behavior scale) had not been developed on a separate sample of subjects so that its validity and reliability had not been previously established.

While it was a goal of this study to look at self-esteem and self-efficacy from both general and domain-specific perspectives, it should be kept in mind that the relationship of the general constructs to the specific constructs will vary with the particular domain tapped by the specific constructs. For instance, it is possible that females' specific self-esteem and self-efficacy, in the domain of family relationships, would be higher than their general measures.

It should be kept in mind that the findings regarding the relationship between self-esteem and self-efficacy have been strictly correlational. As such, the data cannot be used to make inferences about cause and effect. It should not be concluded that changes in self-efficacy cause changes in self-esteem; and the reverse also cannot be assumed.

Future research directions

The relationship of global and specific self-esteem and self-efficacy could be a rich topic for further investigation. Much of the evaluation of the meaning of the data in this study consisted of comparing levels of correlations in a

matrix, which was analogous to the monomethod block in a multitrait-multimethod matrix (Campbell & Fisk, 1959). This leads to a logical suggestion for further study; namely, incorporating multiple methods into the study of the multiple traits of general and specific aspects of self-esteem and self-efficacy.

Additional studies of group differences could also bring a clearer understanding of the relationship between self-esteem and self-efficacy. Hughes and Demo (1989) helped set the stage for such research, when they suggested that social discrimination interferes with the motivating function of self-efficacy for Blacks and weakens the relationship of self-efficacy to self-esteem.

Several types of construct validity evidence suggested by Cronbach and Meehl (1955) were not used in the present study and could point to directions for future research. For instance, change in measured levels of the construct over time can point to validity, if the change is as expected. Experimental manipulations of one of the constructs would make it possible to answer questions about how changes in one construct effect changes in any of the other constructs. For example, would changes in social self-efficacy bring about changes in social self-esteem, general self-esteem, or general self-efficacy? If this question was answered positively, it could provide support for a counseling approach, in which

assessments would be made of what specific domains are plagued by low self-esteem and/or self-efficacy. When those domains are identified, specific counseling interventions could be developed.

In addition, Cronbach and Meehl (1959) suggested that factor analysis could be used to examine construct validity. It would be informative to combine items from all four instruments used here into one long questionnaire and see if submitting the resulting data to factor analysis would yield four factors corresponding to the original instruments.

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APPENDIX. QUESTIONNAIRE MATERIALS PACKET

INFORMED CONSENT STATEMENT

The purpose of this statement is to give you information to help you decide whether you wish to participate in a research project investigating feelings, attitudes and behaviors. You will be asked to complete five brief questionnaires that should take less than one hour.

Upon completion of the questionnaires, you will receive one extra credit point applicable towards the designated class and the researcher will gain data, therefore making the time spent beneficial to both parties.

There are no known risks to you and all of your answers will be treated with strict regard for confidentiality. Your name will **not** appear on any answer sheets and will not be connected with any part of the information coming out of the research. Summaries of the results of this research will report **group** data only.

Participation in this research is completely voluntary and **you may withdraw at any time** without penalty or loss of credit. If questions arise about any task during your participation, you may ask the experimenter for clarification.

I HAVE READ AND UNDERSTAND THE ABOVE INFORMATION AND AGREE TO PARTICIPATE IN THE RESEARCH

Signature

Print your full name

Date

GENERAL INSTRUCTIONS

This packet contains five questionnaires that ask you to respond to statements about your attitudes, feelings and behaviors. Try to be as honest, and as serious as you can in marking your answers. While some of the questions may appear to be unusual, they have been included in order to represent a wide range of beliefs and behaviors. Please work quickly but do not skip any questions or pages. There are no right or wrong answers so answer as best you can.

The questionnaires are to be completed in the order presented, and the answers recorded on the correct space on the answer sheet provided. **YOU ARE NOT TO MARK ON ANY OF THE TEST BOOKLETS.** Specific instructions necessary for completion are given at the beginning of each questionnaire; please read these instructions carefully! When you have completed all the material in this packet, bring all of the material up to the experimenter. Do not lay the material down on the table; hand in directly to the experimenter, who will provide you with the extra credit coupon. You must use a number two lead pencil. If you do not have one with you, inform one of the experimenters, and one will be provided for you.

Thank you for participating in this project.

**** DO NOT PUT YOUR NAME ON ANY OF THE MATERIAL.**

**** BE SURE TO MARK YOUR DATE OF BIRTH AND SEX IN THE
APPROPRIATE SPACES ON THE ANSWER SHEETS**

SEEB

Directions: Please note below that "A" indicates strongest agreement and "E" indicates strongest disagreement.

- A. Agree strongly
- B. Agree moderately
- C. Neither agree or disagree
- D. Disagree moderately
- E. Disagree strongly

1. I feel good about my eating habits
2. I eat as sensibly as most people.
3. Eating and guilt go together for me.
4. I don't like myself because of the way I eat.
5. My daily diet shows I am a strong person.
6. I feel guilty when I overeat.
7. I am satisfied about my daily food intake.
8. I don't want others to know how much I eat.
9. I often feel self-critical because of my daily diet.
10. I am proud of myself, when it comes to my diet.
11. I hate myself when I fall off an easy diet.
12. Eating does not affect how good I feel about myself.
13. I feel guilty when I don't eat enough.
14. I sometimes get angry at myself while I am eating.

ESEE

Directions: Please note below that "A" indicates strongest agreement and "E" indicates strongest disagreement.

- A. Agree strongly
- B. Agree moderately
- C. Neither agree or disagree
- D. Disagree moderately
- E. Disagree strongly

1. I frequently overeat, even when I plan not to.
2. My friends would laugh at me if they knew how much I eat.
3. At times, it seems impossible to control my weight.
4. I sometimes have the urge to vomit after eating.
5. I think a lot about getting fat.
6. Dieting just doesn't work for me.
7. Sometimes I go on eating binges.
8. Before I eat, I often feel depressed.
9. My life seems to revolve around food.
10. I eat snacks even when I am not hungry.
11. I can normally control my eating behavior.
12. Even when I try, I have trouble controlling my weight.
13. I give up on diets after a few days.
14. I often eat more food than I want to.
15. I spend too much time eating.
16. Most of the time I can resist the urge to stuff myself.
17. I bounce from too much to too little control of eating.
18. I overeat when I am distressed.
19. After a diet, I usually go on an eating binge.
20. I think often about food.
21. I frequently overeat.
22. Sometimes I eat so much I get sick.
23. I wish I could better control my eating.
24. If I am not careful, I know I will get fat.
25. I can't control how much I eat.
26. My weight makes me look unattractive.
27. I think I have a problem with my eating.
28. I often find myself eating, even when I didn't plan to.
29. I can't help overeating.
30. At times, it seems impossible to control my eating habits.

GSE

INSTRUCTIONS: This questionnaire is a series of statements about personal attitudes and traits. Each statement represents a commonly held belief. Read each statement and decide to what extent it describes you. There are no right or wrong answers. You will probably agree with some of the statements and disagree with others. Please indicate your own personal feelings about each statement below by marking the letter that best describes your attitude or feeling. Please be truthful and describe yourself as you really are, not as you would like to be.

MARK:

- 1=A If you DISAGREE STRONGLY with the statement
- 2=B If you DISAGREE MODERATELY with the statement
- 3=C If you neither agree or disagree with the statement
- 4=D If you AGREE MODERATELY with the statement
- 5=E If you AGREE STRONGLY with the statement

1. When I make plans, I am certain I can make them work.
2. One of my problems is that I cannot get down to work when I should.
3. If I can't do the job the first time, I keep trying until I can.
4. It is difficult for me to make new friends.
5. When I set important goals for myself, I rarely achieve them.
6. I give up on things before completing them.
7. If I see someone I would like to meet, I go to that person instead of waiting for him or her to come to me.
8. I avoid facing difficulties.
9. If something looks too complicated, I will not even bother to try it .
10. If I meet someone interesting who is very hard to make friends with, I'll soon stop trying to make friends with that person.
11. When I have something unpleasant to do, I stick to it until I finish it.
12. When I decide to do something, I go right to work on it.
13. When trying to learn something new, I soon give up if I am not initially successful.
14. When I'm trying to become friends with someone who seems uninterested at first, I don't give up easily.
15. When unexpected problems occur, I don't handle them well.
16. I avoid trying to learn new things when they look too difficult for me.
17. Failure just makes me try harder.
18. I do not handle myself well in social gatherings.
19. I feel insecure about my ability to do things.
20. I am a self-reliant person.

21. I have acquired my friends through my personal abilities at making friends.
22. I give up easily.
23. I do not seem capable of dealing with most problems that come up in my life.

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RSE

Please read each of the following statements carefully and indicate your feelings about each by marking the appropriate space on the answer sheet.

MARK:

1=A If you STRONGLY AGREE

2=B If you AGREE

3=C If you DISAGREE

4=D If you STRONGLY DISAGREE

1. On the whole, I am satisfied with myself.
2. At times I think I am no good at all.
3. I feel that I have a number of good qualities.
4. I am able to do things as well as most people.
5. I feel I do not have much to be proud of.
6. I certainly feel useless at times.
7. I feel that I'm a person of worth, at least on an equal plane with others.
8. I wish I could have more respect for myself.
9. All in all, I am inclined to feel I am a failure.
10. I take a positive attitude toward myself.